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FAX NO: **571-273-8300**

REMARKS: **Serial No. 09/574,595, filed May 19, 2000**
Attached hereto, please find an Appeal Brief

Total Number of Pages (Including This One): 40

FROM: Daniel J. Krueger, Direct Dial No. 713/238-8055

DATE: December 20, 2005 ATTORNEY DOCKET NO. 1991-01400

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TRANSMITTAL FORM

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Total Number of Pages in This Submission: 40

Application Number	09/574,595
Filing Date	May 19, 2000
First Named Inventor	Michael BUNDY
Art Unit	3624
Examiner Name	N. SUBRAMANIAN
Attorney Docket Number	1991-01400

ENCLOSURES *(Check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
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  - ☐ Affidavits/declaration(s)
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellants:	Michael Bundy	§	Confirmation No.:	7510
Serial No.:	09/574,595	§	Group Art Unit:	3624
Filed:	May 19, 2000	§	Examiner:	N. Subramanian
For:	Latency Monitor	§	Docket No.:	1991-01400

APPEAL BRIEF

Date: December 20, 2005

Mail Stop Appeal Brief - Patents
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Alexandria, VA 22313-1450

Sir:

In response to the final office action of September 15, 2005, the appellant files this appeal brief. A notice of appeal was filed via facsimile on December 13, 2005.

TABLE OF CONTENTS

I. REAL PARTY IN INTEREST

The real party in interest is the E*TRADE Financial Corporation, which acquired the assignee Tradescape Technologies LLC by merger.

II. RELATED APPEALS AND INTERFERENCES

Appellant is unaware of any related appeals or interferences.

III. STATUS OF CLAIMS

The status of the claims is as follows:

Originally filed claims:	1-16.
Added claims:	17-40.
Canceled claims:	9-16 and 25-40.
Currently rejected claims:	1-8 and 17-24.
Presently appealed claims:	1-8 and 17-24.

IV. STATUS OF AMENDMENTS

An after-final amendment was filed concurrently with the notice of appeal to cancel claims 25-40.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The invention is expressed in the instant application as a method for displaying market latency to a customer. (2/6).[1] Customers in a securities trading business may include day traders, institutions, and active private investors. (1/12). Broker-dealers increasingly make available to their customers on-line submission, cancellation, and tracking of the status of orders for securities. (1/11). Customers are increasingly demanding regarding quality and speed of execution, and may be presented with several markets quoting securities at the current price. Markets quoting the same price, however, are not the same in terms of quality of execution. Especially regarding speed, all markets are different. It would be useful, therefore, if customers had a display of information helpful in identifying which markets are likely to execute orders more quickly than others. (1/13).

Various markets exist that can execute orders for securities by accepting buy and sell orders from broker-dealers, matching or failing to match buy orders with sell orders, and communicating the results to the broker-dealers. (6/4). An "electronic communications network" refers to an order matching service that matches orders instead of maintaining an inventory.[2] (4/9). A "market maker" means a broker-dealer that provides order matching in a stock by maintaining an inventory of the stock.[3] (6/14).

Orders, cancellations, and responses are communicated to and from markets by use of data communications ports. (1/27). Many broker-dealers handle volumes of orders so large as to require more than one port per market. However, ports are often not equal in

[1] (2/6) refers to the text that begins at page 2, line 6 of Applicant's patent application.
[2] Examples of ECN's are Archipelago and Instinet.
[3] Examples of widely known market makers are Bear, Stearns & Co., Inc.; Goldman, Sachs & Co.; Lehman Brothers, Inc.; Smith Barney, Inc.; and Paine Webber, Inc.

their ability to communicate with a particular market. Sometimes they fail, either partially or completely. (1/28).

Latency is a measure of the speed with which markets respond to orders and cancellations. Instant latency is calculated dependent upon one recorded time when one message is sent to a market and one recorded time when a corresponding response is received from the market. (9/16). Average latency is dependent upon at least one recorded time when at least one message is sent to the market and at least one recorded time when a corresponding response is received from the market, recorded either over a defined period of time or on N most recent recorded times. (9/21).

An example of the use of message counts for diagnostic purposes is a display showing an increase in latency for a port explained by an increase in message counts for the port, thus indicating the port slowed down because its work load increased and indicating also that there is no problem with the system. (10/30). Another example is a display showing an increase in latency for a port explained by the port's message count going to zero, thus indicating that the increase in latency is caused by a catastrophic failure of the port. (11/2).

As indicated in columnar format in Figure 5B, below, the claimed invention includes the display of multiple markets (118) and one or more latencies (202, 320) calculated for each market based on sent (144) and received (146) messages.

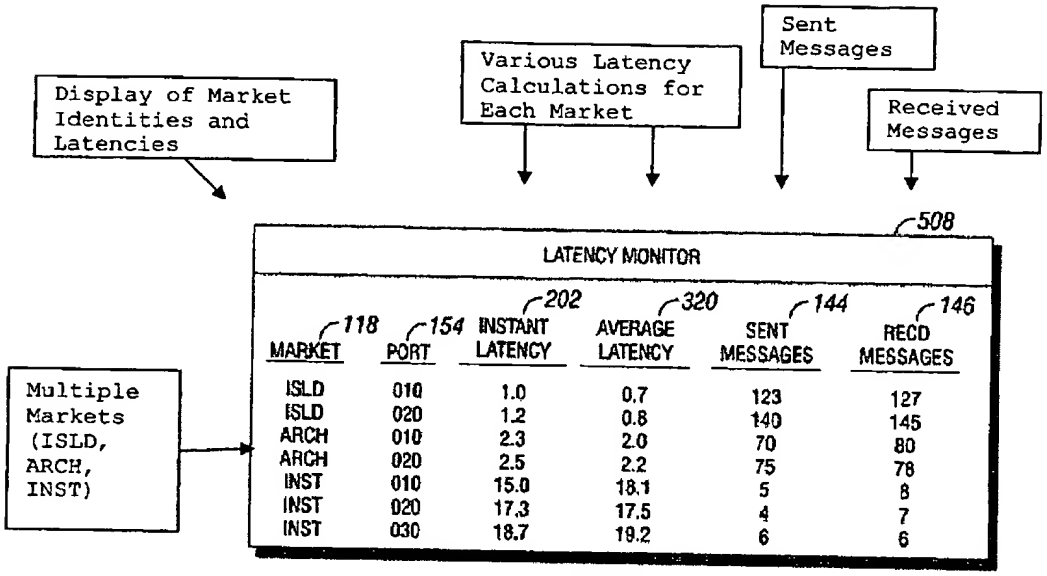

FIG. 5B

Claim 1 recites:

A method of displaying latency, the method implemented in a broker-dealer computer system, the system being engaged in automated processing of orders for securities including sending messages to markets and receiving from markets responses to messages, the method comprising:

recording for messages sent to at least two different markets the time when each **message is sent** and the identity of the market to which each message is sent, the messages comprising orders;

recording for responses received from said markets the time when each **response is received**, wherein each response corresponds to a particular message of said messages;

calculating for at least **a first market a first latency** dependent upon at least one recorded time when at least one message is sent to the first market and at least one recorded time when a corresponding response is received from the first market;

calculating for **a second market a second latency** dependent upon at least one recorded time when at least one message is sent to the second market and at least one recorded time when a corresponding response is received from the second market;

displaying on a device the identity of **the first market** and **the latency for the first market**; and

displaying the identity of **the second market** and **the latency for the second market**.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1) Whether claims 1, 3-7, 17, 20, and 22 are properly rejected under 35 U.S.C. 103(a) as unpatentable over Wilson (US Patent 5,864,827) in view of Cuomo et al (US Patent 6,272,539 B1);

2) Whether claims 2, 8, and 23 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson (US Patent 5,864,827) in view of Cuomo et al (US Patent 6,272,539 B1) and further in view of Grochowski et al (US Patent 6,035,389); and

3) Whether claims 18-19, 21, and 24 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson (US Patent, 5,864,827) in view of Cuomo et al (US Patent 6,272,539 B1) and further in view of Patterson Jr. et al (US Patent 5,915,245).

VII. ARGUMENT

The claims do not stand or fall together. Instead, appellant presents separate arguments for various independent and dependent claims. Each of these arguments is separately argued below and presented with separate headings and sub-headings as required by 37 CFR § 41.37(c)(1)(vii).

A. Rejections Under 35 USC § 103 Over Wilson in View of Cuomo

1. Wilson '827

Wilson '827 is directed to a system and method for providing a gateway for the transfer of information between financial markets (exchanges) and customers. More specifically, Wilson '827 describes a system for providing a gateway for the transfer of information between one or more customer system(s) that utilize a common protocol and one or more financial market (exchange) system(s) that utilize the same and/or different protocols that differ from the common protocol.[4]

Before the system described in Wilson '827, customers who wanted to trade securities on financial exchanges (markets) must communicate with a broker via a first protocol. Upon receipt of an order the broker must manually enter the order information for transfer and execution by the relevant financial market, e.g. NYSE, NASDAQ, etc.[5] When a computer is used to communicate between a customer system and a broker system to execute transactions in the equities markets (on the equities exchanges), the computer uses the Financial Information Exchange (FIX) protocol that has been implemented by many brokerages as a common, standard protocol. All electronic communications between customers and brokers are formatted according to the FIX protocol.[6]

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[4] *Wilson*, col. 1, ll. 5-13.
[5] *Id.* at col. 1, ll. 30-41.
[6] *Id.* at col. 1, l. 64 - col. 2, l. 5.

However, in the equities markets, the various exchanges each utilize proprietary protocols governing communications between the exchange and brokers who are electronically connected to and who transact business on the exchange. For example, the NYSE uses the Common Message Switch (CMS), while the Toronto Stock Exchange (TSE) uses the Securities Trading Access Message Protocol (STAMP) format.[7] Thus, any broker wishing to transmit transaction information, e.g., send a customer's order, to an exchange must take the order received from the customer (i.e. in FIX protocol) and reenter it into the broker's system which interfaces with the relevant exchange (using a different protocol), thereby allowing the order to be understood by the exchange's system.[8]

The system described in the Wilson '827 patent includes a gateway that receives and transmits transaction information from/to at least one customer system, receives and transmits transaction information from/to a plurality of markets (exchanges), and translates transaction information from a first protocol, i.e., format and/or language, not at least a second protocol and vice versa.[9]

Referring to Figure 1, below, a gateway **1** such as a server or a mainframe computer, is coupled to one or more customer systems **2**.[10] The gateway **1** may additionally be coupled to other customer system(s) **4** via additional customer/gateway interfaces **10**, and/or broker system(s) **6**. The broker system(s) can be used, for example, on trading desks or by sales people at the broker's facility for placing customer telephone orders or trades for in-house accounts such as mutual funds or hedge funds or for the

[7] *Id.* at col. 2, ll. 6-13.
[8] *Id.* at col. 2, ll. 14-20.
[9] *Id.* at col. 3, ll. 8-14.
[10] *Id.* at col. 4, ll. 4-9.

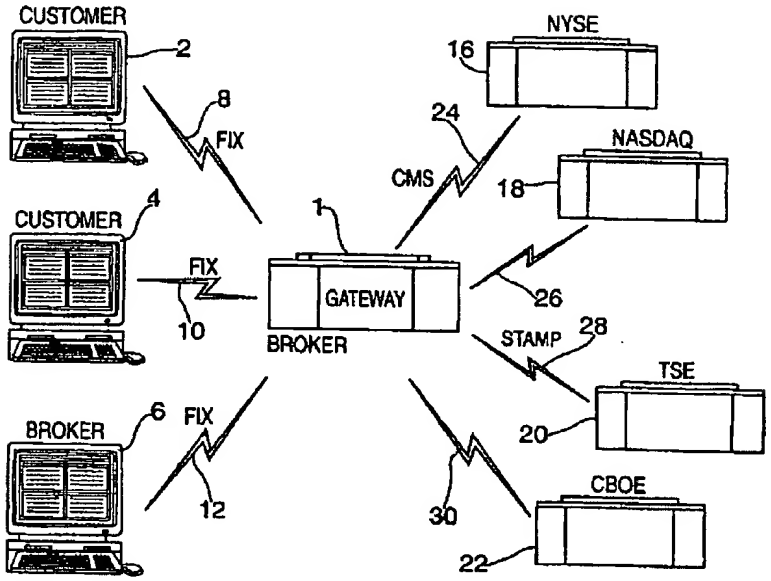

FIG. 1

broker's own account.[11] All communications between the gateway **1** and the customer systems **2**, **4** and/or the broker system(s) **6** occur using a common protocol, for example, the FIX protocol.[12]

The gateway **1** is also coupled to one or more financial exchanges **16**, **18**, **20**, **22**, for example, NYSE **16**, NASDAQ **18**, TSE **20**, CBOE **22**, which may be, for example, a microcomputer, mainframe computer or some other type of processing system, where the exchange may receive and process orders, via an exchange/gateway interface **24**, **26**, **28**, **30**.[13] The communications between the gateway **1** and each exchange **16**, **18**, **20**, **22** occurs using a proprietary protocol specific for the relevant exchange. For example, the NYSE **16** uses CMS protocol, and TSE **20** uses STAMP protocol. Any information transmitted from the gateway **1** to the NYSE **16** must be in CMS protocol, while any information

[11] *Id.* at col. 4, ll. 18-29.
[12] *Id.* at col. 4, ll. 30-33.
[13] *Id.* at col. 4, ll. 40-46.

transmitted from the gateway **1** to the TSE **20** must be in STAMP protocol. The gateway **1** serves as the link or interface between the customer systems **2**, **4** and/or broker system(s) **6**, and the exchanges **16**, **18**, **20**, **22**.[14] For example, each transaction from a customer system **2** by the gate way **1** is translated from FIX protocol into the proper protocol for the exchange to which it is to be transmitted.[15]

2. Cuomo '539

Cuomo '539 relates to estimating a user's overall network delay when using collaborative applications.[16]

This patent, filed in 1998, discusses the relatively recent (then) advent of the Internet. According to the specification, a threat to full utilization of the Internet was a lack of user sophistication.[17] By way of example, when a telephone user experiences a poor connection, he likely understands that it is an isolated incident and will reinitiate the call.[18] But while expectations for on-line communications are generally high, most users have limited understanding regarding when and why performance will differ.[19] As such, most users typically cannot distinguish between a poor connection and, for example, a connection carrying data intensive communications that may exhibit what on the surface appears to be degraded communication quality.[20] Almost invariably, users find a perceptible delay frustrating, and in many instances, confusing, as it may often be unclear as to whether or not the message sent by the user was properly transmitted and received

[14] *Id.* at col. 4, ll. 51-62.
[15] *Id.* at col. 6, ll. 34-37, 58-60.
[16] *Cuomo*, col. 1, ll. 8-11.
[17] *Id.* at col. 2, ll. 4-13.
[18] *Id.* at col. 2, ll. 20-22.
[19] *Id.* at col. 2, ll. 26-28.
[20] *Id.* at col. 2, ll. 28-34.

by the server.[21] This is particularly true because the Internet provides no feedback regarding either the cause of, or the probability of a solution to, what the user perceives as a "glitch" or problem with the network connection. A user may often re-send the same message or request multiple times, wasting network transmission resources, needlessly incurring additional processing at the server and bogging communications down further.[22] Thus, many on-line users may reject the Internet for business communications.[23]

The system described in the Cuomo '539 patent determines and visually represents network information to users of the network. Specifically, the system estimates overall network delay information for one or more users of the network, and periodically provides this overall delay information to network users via the graphical user interface at the users' computer monitors.[24]

In one embodiment, an estimated overall delay value associated with a user's communications with a site in a network is determined, and the user is then provided a visual representation of this estimated overall delay value.[25] As illustrated in Figure 2, immediately above, user **21** is connected to the network **10** by a transmission link **12**. Typically, this transmission link provides a connection for passing electronically stored information between user **21** and a network node. When a client such as user **21** sends a message or request to a server **34**, this message typically travels from his computer or terminal as information bits. These bits travel via transmission link **12** to network **10** (in the case illustrated in Figure 2 where user **21** resides outside network **10**), where they are then re-transmitted across network **10** by any of a variety of network communications

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[21] *Id.* at col. 7, ll. 21-26.
[22] *Id.* at col. 7, ll. 26-30.
[23] *Id.* at col. 2, ll. 45-51.
[24] *Id.* at col. 3, ll. 9-16.
[25] *Id.* at col. 3, ll. 17-21.

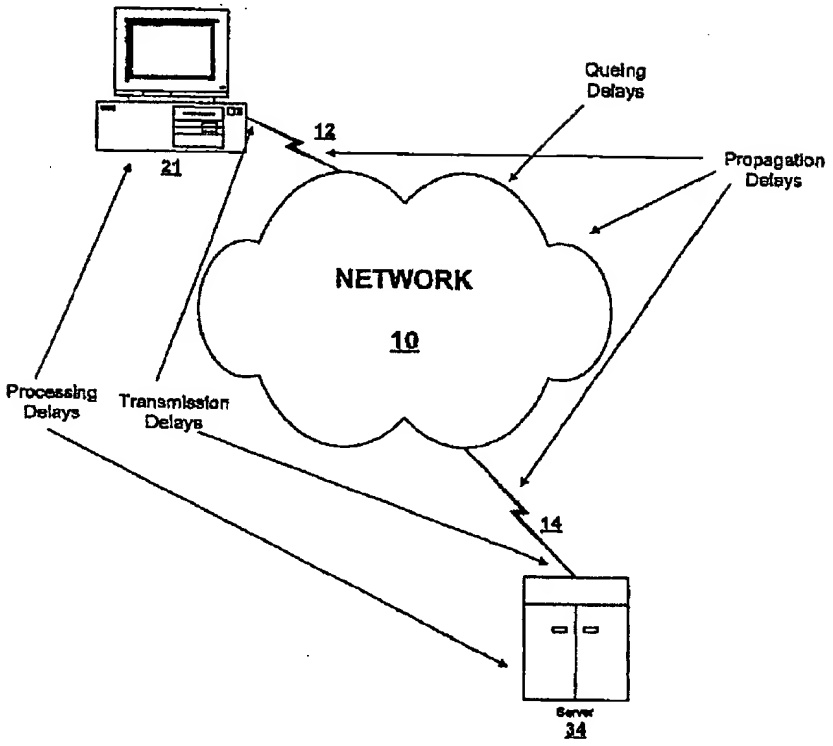

FIGURE 2

paths to another network user, such as server **34**. Once the server **34** receives these information bits, it processes the message and provides a response, if appropriate, back across network **10**.[26]

When user **21** transmits a message to server **34** there will be a delay before user **21** receives a response to the message from server **34**. This delay is the amount of time passing between the moment when a network user such as client **21** first starts transmitting a message to another network user such as server **34** until the moment the

[26] *Id.* at col. 6, ll. 1-18.

response sent by server **34** is fully received by client **21**.[27] The Cuomo '539 patent does not limit its system solely to measurement of this delay, however.[28]

The system of the Cuomo '539 patent thus measures various delays, and estimates the delay a user may experience.[29] The overall delay information is then displayed, and periodically updated, on the user's computer display.[30] The delay estimate may be visually represented by a numerical display or indicator, a meter wherein the length of a bar in the meter increases with increasing expected overall delay, a scale, a graph, or even a "traffic light" where the colors red, yellow, and green represent large, intermediate, and short expected delays.[31]

3. Rejection of Claim 1

In an office action dated November 26, 2004, the Examiner rejected claim 1. The Examiner states on page 2 of the Office Action,

> ...Wilson teaches a method implemented in a broker-dealer computer system, the system being engaged in automated processing of orders for securities including sending messages to markets and receiving from markets responses to messages, the method comprising the steps of recording for messages sent to markets the identity of the market to which each message is sent, the messages comprising orders and displaying the identity of the market (See Wilson Figure 3, Column 5 lines 19-25, Column 6 lines 22-30 and lines 44-55); and wherein said messages are sent to different ones of said markets (See Wilson Column 3 lines 8-12).
>
> Wilson does not explicitly teach the steps of recording the time when each message is sent, recording for responses received from recipient of the first message the time when each response is received, wherein each response corresponds to a particular message, calculating for at least one recipient a latency dependent upon at least one recorded time when at least one message is sent to the recipient and at least one recorded time when a corresponding response is received from the recipient and displaying the latency for the recipient.

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[27] *Id.* at col. 6, ll. 19-27.
[28] *Id.* at col. 11, ll. 44-63.
[29] *Id.* at col. 5, ll. 8-18.
[30] *Id.* at col. 5, ll. 18-20.
[31] *Id.* at col. 13, l. 22 – col. 14, l. 5.

> Cuomo teaches the steps of recording the time when each message is sent, recording for responses received from recipient of the first message the time when each response is received, wherein each response corresponds to a particular message, calculating for at least one recipient a latency dependent upon at least one recorded time when at least one message is sent to the recipient and at least one recorded time when a corresponding response is received from the recipient and displaying the latency for the recipient. (See Cuomo abstract, Column 3 lines 11-16, 28-35, Column 3 line 44 – Column 4 line 21, Claims 1-3).
>
> It would have been obvious to one of ordinary skill in the art at the time of the current invention to include the teaching of Cuomo to the invention of Wilson. The combination of the disclosures taken as a whole suggests users would have benefited from having information about network delays so that they may make informed decisions about [a] further course of action.

OA of 11/26/04, p.2.

4. Arguments Regarding Claims 1, 3-7, 17 and 22

If the teachings of Wilson '827 and Cuomo '539 were combined, they would not render obvious the invention recited in claim 1, nor any of its dependent claims including claims 3-7, 17, and 22. Simply put, Wilson '827 does not add anything of value to the teachings of Cuomo '539, and Cuomo '539 fails to teach, suggest, or make obvious instant claim 1. A combination of these references would, at most, yield a total transaction request "latency" as taught by Cuomo '539. It would not show two different latencies for two different markets, as required by claim 1.

In addition to the shortcomings acknowledged by the Examiner in Wilson '827, the Wilson '827 patent fails to teach a display of latency information. There is no indication of a display device in gateway 1, nor any indication that latency information would be displayed in any device of the Wilson '827 system. This is not surprising, because Wilson '827 describes itself merely as a translation and recording device, sending a confirmation message to the user only after all the transactions have been completed. It makes no teaching of timing the transactions, either separately or in total. It also makes no specific

teaching of displaying a latency for each of at least two different markets. After this shortcoming was pointed out to the Examiner, the Examiner responded that Figure 1 of the Wilson '827 patent discloses interfaces for displaying the pertinent information. Office Action of 9/15/05, p. 4. The Examiner's logic apparently goes like this: because the customer interface is shown as a personal computer, and personal computers have display monitors, the customer interfaces of Wilson '827 would display latency information. But the Wilson '827 patent makes no teaching of displaying latency information, anywhere, at any time, or in any way. Regardless whether the customer interface would reasonably include a display, there is simply no suggestion in the Wilson '827 patent to display any latency information, much less latency information for two different markets. The Examiner's logic, that a component *could* be used for a purpose even though there is absolutely no suggestion in the reference to do so, has been specifically condemned by the Federal Circuit. *See* MPEP § 2143.01 ("Fact That References Can Be Combined or Modified is Not Sufficient to Establish Prima Facie Obviousness"); *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990) (fact that a machine could be run at the claimed speed does not make it obvious to do so).

The only teaching of Wilson '827 cited by the Examiner relevant to the claims is that broker-dealer computer systems process orders for securities including sending messages to markets and receiving responses to messages from markets. The existence of such systems is admitted in the Background section of the patent application. The Wilson '827 patent simply does not add anything of value to the teachings of the Cuomo '539 patent which was not already supplied by the Background section of the patent application.

The teachings of Cuomo '539 are entirely different from that of the invention of claim 1. As explained above, Cuomo '539 employs "latency" information in order to

prevent uneducated users from making uneducated mistakes such as multiple electronic submissions. *See, e.g.,* Cuomo '539 at col. 7, ll. 17-36. Graphically, Cuomo '539 presents icons such as a "traffic light" in order to encourage a user to be more patient and re-submit a message when, in fact, a delay is present simply because of heavy traffic. Cuomo '539 provides no teaching or suggestion of displaying latencies for different markets. Although the Cuomo '539 patent calculates a delay time characterized by the Examiner as a latency, this latency calculated by Cuomo '539 would not correspond to two different markets, as required by claim 1. The Cuomo '539 system does not allow for any direct comparison of latencies, nor does it address the issue of identifying which markets are likely to execute orders more quickly than others. In short, there is no suggestion in Cuomo '539 that two latencies, for two different markets, should be displayed.

Based on the foregoing, Appellant respectfully submit that the rejections of independent claim 1 and its dependent claims including claims 3-7, 17, and 22 be reversed, and the claims set for issue.

5. Arguments Regarding Claim 20

Claim 20 recites that the display be to a customer who originates at least one of the messages and selects one of the markets after the step of displaying. The Examiner does not specifically address the limitations of claim 20. Because the Examiner does not specifically address the limitations of claim 20, the Examiner therefore has not carried his burden to show a *prima facie* case of obviousness.

The appellant further submits to the Board that Wilson '827 and Cuomo '539 provide no teaching or suggestion that a market would or could be selected on the basis of a display of latencies for those markets, as is required by claim 20.

B. Rejections Under 35 USC § 103 Over Wilson in View of Cuomo and Grochowski

1. Grochowski '389

The Grochowski '389 patent is entitled "scheduling instructions with different latencies." The Grochowski '389 patent asserts that it is generally known that a processor retrieves and executes a sequence of instructions stored in one or more memories. Many of the instructions executed have data and/or control dependencies on earlier instructions of the sequence.[32] Modern processors may include a variety of features to increase the processing speed above that of previous processors. One such feature is speculative execution.

In speculative execution, the processor determines expectations about dependencies before execution and checks whether the expectations turned out to be true after execution. When the expectations turn out wrong, the processor re-executes the affected instructions.[33]

Embodiments of the Grochowski '389 patented invention schedule instructions based on determinations of "expected" as opposed to "actual" register latencies. The "expected" register latencies are updated based on instruction types.[34] Figure 1, above, illustrates one embodiment for a register latency table 10 used in scheduling instructions for execution. The register latency table **10** is an electronic hardware structure having a number of rows **14, 16, 18** for storing binary latency vectors, i.e. register latencies of corresponding registers (not shown). The register latency table **10** also has at least one port **12** for reading and writing latency vectors therefrom and thereto, respectively.[35]

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[32] *Grochowski* at col. 1, ll. 10-13.
[33] *Id.* at col. 1, ll. 34-38.
[34] *Id.* at col. 3, ll. 27-32.
[35] *Id.* at col. 3, ll. 44-51.

2. Rejection of Claim 2

The Examiner rejected claim 2 under 35 USC 103(a) in view of Wilson and Cuomo as applied to claim1, and further in view Grochowski '389. The Examiner states:

> Wilson and Cuomo combined do not teach the step of latency for a port. Grochowski teaches the step of latency for a port (Grochowski abstract, Column 2 lines 19-25) Equipment failure is interpreted to include failure of ports also.

OA of 11/26/04, p. 7.

In response to the Applicant's argument that the Grochowski '389 patent fails to teach latency associated with a port, the Examiner respectfully disagreed. "Grochowski teaches latency for a port (See Grochowski abstract, Column 2 lines 19-25)." OA of 9/15/05.

3. Arguments Regarding Claim 2

It is the Examiner's burden to present a *prima facie* case of obviousness for each claim rejected. Appellant respectfully submits to the Board that the Examiner has failed to carry his burden under 35 USC 103(a).

As an initial matter, Grochowski '389 patent is not suitably combined with Wilson or Cuomo because it is not analogous art. It is telling that the Examiner cites only to the Abstract and Summary of the Invention sections, making no reference to the Detailed Description. The instant claims and patent application recite methods for improving the performance of financial markets by displaying latencies corresponding to at least two markets. The Grochowski '389 patent relates to computers and processors, and more specifically, to scheduling register instructions with different latencies. The Applicants respectfully submits that these are not analogous arts.

Further, even if the Grochowski '389 patent were analogous art (which it is not), there is no motivation to combine the Grochowski '389 patent with the teachings of Wilson

and Cuomo. The only way the Grochowski '389 patent is similar to Wilson, Cuomo, or rejected claim 2 is the inclusion of the words "latency" and "port" in the text of the Grochowski '389 patent. They do not address the same problem or suggest a combination that would result in the display of two different latencies for two different ports.

Moreover, a combination of the Wilson '827, Cuomo, and Grochowski '389 patent would not yield the invention of claim 2. If the teachings of the Wilson '827, Cuomo '539, and '389 patents were combined, they would not render obvious the invention recited in claim 2. Grochowki '389 does not teach anything with respect to claim 2 that was not already admitted in the Background section of the instant application.

The Grochowski '389 patent teaches that a computer processor has data ports. The issue of whether the Grochowski '389 patent teaches a port or not is irrelevant, however, as the existence of ports being used between brokers and markets, and that there may be one or more ports per market, is admitted in the Background section of the application.

The Grochowski '389 patent does *not* teach the idea of latency as that term is used in the context of the claims. Indeed, the Examiner fails to show even remotely how the term "latency" as that term is used in the Grochowski '389 patent is relevant to latency as that term is defined in the instant specification. Turning to the specific support cited by the Examiner for support, the Grochowski '389 patent uses the term "latency" but the term as used by the Grochowski '389 patent is completely unsuited to be integrated into a combination of the Wilson '827 and Cuomo '539 patents in order to render obvious claim 2. Thus, the Examiner has failed to carry his burden to show a *prima facie* case of obviousness.

4. Arguments Regarding Claim 8

Claim 8 recites, in part, displaying in addition to the identify of the first market and the first latency for the first market, the number of messages sent to the first market through the port and the number of responses received from the first market through the port during a given period of time. The Examiner makes no rejection that specifically addresses the requirement of claim 8 that the display of latency would include the number of messages sent to the first market through the port and the number of responses received from the first market. This is not surprising, given the inapplicability of the invention disclosed in the Grochowski '389 patent to the teachings of either the Wilson '827 or Cuomo '539 patents.

5. Arguments Regarding Claim 23

Claim 23 recites that an absence of responses indicates a failure of the port. The Examiner makes no specific citation to the Grochowski '389 patent for the rejection of this limitation in claim 23. There is simply no teaching in the Grochowski '389 patent, and no effort by the Examiner, to show that the absence of a response indicates that a port is not functioning, as recited in claim 23.

C. Rejections Under 35 USC § 103 Over Wilson in View of Cuomo and Patterson

1. Patterson '245

The Patterson '245 patent is a method of managing the activities of one or more floor brokers situated on the floor of a single exchange (i.e. market).[36] The Background of the Patterson '245 patent explains the details of how a security is bought and sold on the floor of a single market, in this case the New York Stock Exchange.[37]

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[36] *Patterson,* Abstract, ll. 1-2.
[37] *Id.* at col. 1, ll. 23-25.

The Patterson '245 patent explains the roles of various parties on the floor of a trading exchange, including clerks, specialists, floor brokers, floor traders, and runners. The frenzied interaction of these individuals is complicated, and to the uninitiated may seem almost Rube Goldberg-esque. It is an object of the Patterson '245 to improve the interaction of these individuals in terms of speed and accuracy.

A typical transaction originates when an order is placed with an off-the-floor trading desk to buy or sell a particular security.[38] An investor may also request that the trading desk obtain a quote from the floor of the exchange.[39] The trading desk may either convey the order or quote request to a clerk (electronically or by telephone), or electronically to a specialist at a trading post.[40]

The clerk is known as the "order" or "booth clerk." The clerk is not part of the trading crowd, but he or she plays a role in investor transactions.[41] The booth clerk notes the parameters of the order, for example, the side of the transaction (buy or sell), the symbol of the security (e.g. IBM), the quantity, any special condition (all or non, fill or kill, etc.), and the time that the order is placed. An important aspect of the clerk's function is to ensure that the order is delivered to the floor broker so that it is executed in a timely fashion.[42] Approximately ninety percent of the orders that the floor broker executes are obtained from a clerk who is situated on the perimeter of the exchange.[43] Once handled, the clerk reports the execution or quote to the investor.[44]

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[38] *Id.* at col. 2, ll. 9-13.
[39] *Id.* at col. 2, ll. 29-31.
[40] *Id.* at col. 2, ll. 9-13.
[41] *Id.* at col. 1, ll. 64-65.
[42] *Id.* at col. 2, ll. 14-25.
[43] *Id.* at col. 1, ll. 57-59.
[44] *Id.* at col. 1, l. 67 – col. 2, l. 2.

The relevant players in the trading crowd on the floor of an auction exchange for this discussion are the specialist and the floor broker.[45] They are each situated on the physical auction floor. The auction floor is divided into several rooms, each of which has posts or columns around which trading panels are arranged. Each trading panel corresponds to a particular security, and is where that security is traded.[46]

The specialists are situated at the trading panels, and they call out the best bid and offer prices (buy and sell prices) to brokers. The floor broker roams about the trading floor and transacts orders on behalf of the buyers and sellers. The floor broker may also obtain quotes, according to instructions from the booth clerks.[47] The floor broker is typically stationed at one of several trading panels.[48] However, the floor broker is effective in his or her function only if he or she is free to move from panel to panel, and to different posts.[49]

Traditionally, a booth clerk transcribes the instructions onto either an order slip or a quote request form. If the booth clerk decides to use a floor broker, he or she enlists the aid of pages or runners to carry the instructions to the floor broker because the booth clerk is situated around the perimeter of the trading floor. Until an order is returned to the booth clerk, the booth clerk cannot apprise the investor of progress on the instruction.

The invention of the Patterson '245 patent comprises at least one base station (BS) and one handheld device.[50] Figure 1, below, shows an exemplary display screen **300** of the BS that may constitute a management screen for monitoring the activities of one or more floor brokers. The management screen **300** contains three principal sections: one for

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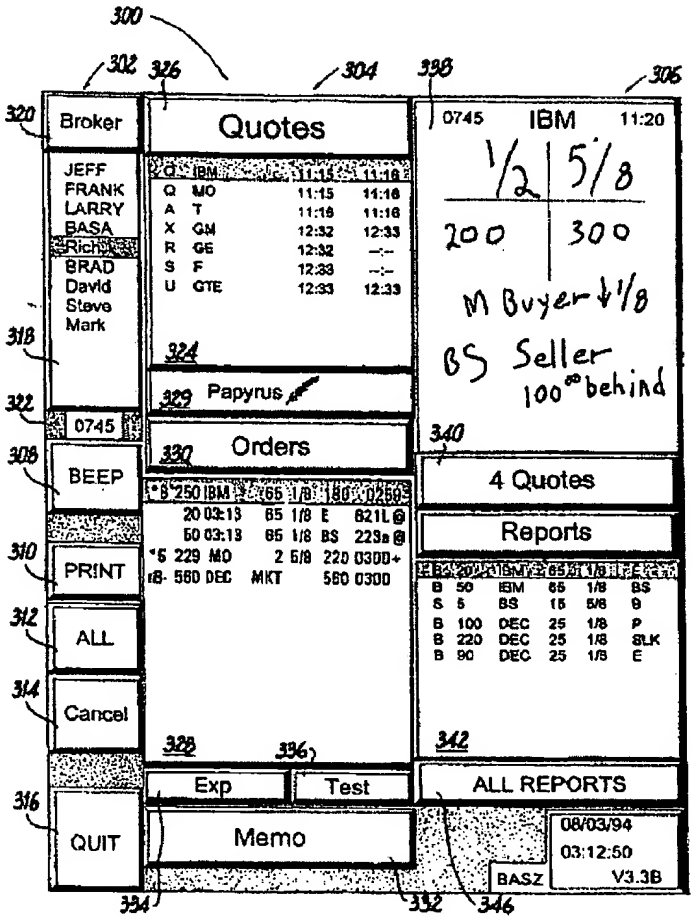
[45] *Id.* at col. 1, ll. 40-42.
[46] *Id.* at col. 1, ll. 35-39.
[47] *Id.* at col. 2, ll. 62-63.
[48] *Id.* at col. 2, ll. 63-64.
[49] *Id.* at col. 3, ll. 1-3.



administrative control **302**, another for the broker status **304**, and a third for incoming messages **306**.[51] The broker status section **304** of screen **300** displays those quotes and orders that have been delegated to a selected floor broker for handling.[52] The display substantially mirrors the display screen of the handheld device that the floor broker is using on the floor of the exchange.[53] By reviewing the status of the various broker's available to the clerk, he or she can serially monitor the progress of each of the brokers, and can

[50] *Id.* at col. 8, ll. 54-55.
[51] *Id.* at col. 9, ll. 16-21.
[52] *Id.* at col. 9, ll. 53-55.
[53] *Id.* at col. 9, ll. 58-60.

distribute new orders and quote requests to the floor broker that is presently best able to handle additional requests, in the judgment and discretion of the booth clerk.[54]

Consider, for example, a request to buy shares of a stock that has been conveyed to the booth clerk from the trading desk. If the floor broker that normally would handle that stock, or work the section of the exchange floor where that stock is traded, has what the clerk deems to be too many unfilled orders or quote requests in his or her deck, the clerk may review the decks of other brokers in broker list 318 to find one who has fewer pending instructions. The clerk then forwards the instruction to that broker, or to the specialist directly for execution.[55]

The determination of who among several floor brokers is best able to handle a further instruction may be made, for example, by comparing the relative number of instructions having a pending status that have been delegated to the floor brokers, and finding the floor broker with a comparatively few number of such instructions.[56]

2. Rejection of Claim 18

Claim 1 recites the display of two latencies for two markets, thus allowing for the direct comparison of market latencies. Claim 18 goes one step further, reciting the step of *selecting* either the first or second markets *based on* the calculations for latency for the first and second markets.

The Examiner contends that the addition of the Patterson '245 patent to the rejection suggests the limitations of claim 18. In particular, the Examiner stated at page 8 of the Office Action dated November 26, 2004 that

> Patterson teaches the steps of selecting one of said markets based on status information (See Patterson Column 9 line 52 – Column 10 line 9,

[54] *Id.* at col. 9, l. 65 – col. 10, l. 4.
[55] *Id.* at col. 10, ll. 10-19.
[56] *Id.* at col. 10, ll. 26-31.

> status is interpreted to include latency also); messages further comprising cancellations of orders (See Patterson Column 7 lines 4-7); response indicating that at least one of said orders has been filled or that at least one of said orders has not been filled (See Patterson Column 2 lines 26-28). Partially filled implies that at least one of said orders has not been filled.

OA of 11/26/04, p. 8.

3. Arguments Regarding Claims 18-19, 21, and 24

Appellant respectfully submits to the Board that there exist numerous flaws with the Examiner's ad hoc addition of *Patterson* to the *Wilson-Cuomo* combination.

First, the Patterson '245 patent describes a handheld mobile computer used by floor brokers in a *single* market. Claim 18 requires at least *two* markets. The Examiner refers to column 9, line 52 – column 10, line 9 of the Patterson '245 patent for support, a passage provided under the header "Broker Status". As explained there, "The broker status section **304** of screen **300** displays those quotes and orders that have been delegated to a selected floor broker for handling, but which have not been handled and are therefore 'pending'".[57] The clerk can review the status of various brokers listed in the broker box, and can distribute new orders and quote requests to the floor broker that is presently best able to handle additional requests.[58] The operation of the hand-held computer system is endemic of how a single market operates, i.e. applicable to the interaction between clerks, floor brokers, and specialists. Selection among brokers on the trading floor simply has no scalability to selecting among multiple markets.

Second, claim 18 specifies a selection between two markets based on *latency*. The Examiner states that the term "status" is equated with latency but provides no basis for this interpretation. Certainly, it does not come from Patterson '245, which defines "status" differently than the term "latency" is defined in the patent specification. The Patterson '245

[57] *Id.* at col. 9, ll. 53-56

patent defines "status" as meaning the stage of the transaction, that is, whether a quotation has been received in response to a quotation request and whether an order has been completely filled.[59] Latency is defined at page 5 of the application, "a measure of the speed with which markets respond to orders and cancellations." Under 35 USC 103, the Examiner is required to make a *prima facie* case of obviousness. However, the Examiner completely failed to address the clear discrepancy in these definitions. The Applicant submits that the Examiner has failed to carry his burden to show a *prima facie* case of obviousness for claim 18.

A combination of *Wilson*, *Cuomo*, and *Patterson* would not result in a combination that renders obvious the invention of claim 18.

D. Conclusion

For the reasons stated above, appellants respectfully submit that the rejections should be reversed for the reasons given above. Applicants believe that they have complied with each requirement of the appeal brief. If any member of the Board of Appeals has any questions or otherwise feels it would be advantageous, he is encouraged to telephone the undersigned at (713) 238-8055.

In the course of the foregoing discussions, appellant may have at times referred to claim limitations in shorthand fashion, or may have focused on a particular claim element. This discussion should not be interpreted to mean that the other limitations can be ignored or dismissed. The claims must be viewed as a whole, and each limitation of the claims must be considered when determining the patentability of the claims.

It is believed that no extensions of time or fees are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the

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[58] *Id.* at col. 9, l. 62 – col. 10, l. 4.

event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fees required (including fees for net addition of claims) are hereby authorized to be charged to Conley Rose, P.C. Deposit Account Number 03-2769/1991-01400/HDJK.

Respectfully submitted,

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[59] *Id.* at col. 10, ll. 4-9.

VIII. CLAIMS APPENDIX

This listing of claims is the current version of the pending claims in the application.

1. (Previously presented) A method of displaying latency, the method implemented in a broker-dealer computer system, the system being engaged in automated processing of orders for securities including sending messages to markets and receiving from markets responses to messages, the method comprising:

recording for messages sent to at least two different markets the time when each message is sent and the identity of the market to which each message is sent, the messages comprising orders;

recording for responses received from said markets the time when each response is received, wherein each response corresponds to a particular message of said messages;

calculating for at least a first market a first latency dependent upon at least one recorded time when at least one message is sent to the first market and at least one recorded time when a corresponding response is received from the first market;

calculating for a second market a second latency dependent upon at least one recorded time when at least one message is sent to the second market and at least one recorded time when a corresponding response is received from the second market;

displaying on a device the identity of the first market and the latency for the first market; and

displaying the identity of the second market and the latency for the second market.

2. (Previously presented) The method of claim 1 wherein the first latency further comprises latency for a port.

3. (Previously presented) The method of claim 1, wherein the first latency comprises an instant latency calculated dependent upon one recorded time when one message is sent to the first market and one recorded time when a corresponding response is received from the first market.

4. (Previously presented) The method of claim 1 wherein the first latency comprises an average latency dependent upon at least one recorded time when at least one message is sent to the first market and at least one recorded time when a corresponding response is received from the first market, wherein all the recorded times used in calculating the first latency are recorded during a defined period of time.

5. (Previously presented) The method of claim 1 wherein the first latency comprises an average latency dependent upon at least one recorded time when at least one message is sent to the first market and at least one recorded time when a corresponding response is received from the first market, wherein the number of recorded times used to calculate the average latency is limited to a defined maximum, and is more than one.

6. (Previously presented) The method of claim 1 wherein the first latency comprises an average latency dependent upon at least one recorded time when at least one message is sent to the first market and at least one recorded time when a corresponding response is received from the first market, wherein the calculating uses the latest recorded time when

a message is sent to the first market and the latest recorded time when a corresponding response is received from the first market, and wherein the number of recorded times used to calculated the average latency is limited to a defined maximum.

7. (Previously presented) The method of claim 1 further comprising the steps of:

counting the number of messages sent to at least one market during a period of time, including storing in computer memory the number of messages sent to the first market during the period of time;

counting the number of responses received from the at least one market during the period of time, including storing in computer memory the number of responses received from the first market during the period of time; and

displaying, in addition to the identity of the first market and the first latency for the market, the number of messages sent to the first market and the number of responses received from the first market during the period of time.

8. (Previously presented) The method of claim 1 further comprising the steps of:

counting the number of messages sent to a market through a port during a period of time, including storing in computer memory the number of messages sent to the first market through the port during the period of time;

counting the number of responses received from the first market through the port during the period of time, including storing in computer memory the number of responses received from the market through the port during the period of time; and

displaying, in addition to the identify of the first market and the first latency for the first market, the number of messages sent to the first market through the port and the

number of responses received from the first market through the port during the period of time.

9-17. (Canceled)

18. (Previously presented) The method of claim 1, further comprising:

selecting one of said first and second markets based on said calculations for said first latency and said second latency.

19. (Previously Presented) The method of claim 1, said messages further comprising cancellations of orders.

20. (Previously Presented) The method of claim 1, said step of displaying being to a customer who originates at least one of said messages and selects one of said markets after said step of displaying.

21. (Previously Presented) The method of claim 1, said response indicating that at least one of said orders has been filled.

22. (Previously presented) The method of claim 4, said average latency dependent upon at least two recorded times when at least two messages are sent to the first markets and at least two recorded times when corresponding responses are received from the first market.

23. (Previously Presented) The method of claim 2, where an absence of responses indicates failure of said port.

24. (Previously Presented) The method of claim 1, said response indicating that at least one of said orders has not been filled.

25-40. (Canceled)

IX. EVIDENCE APPENDIX

Not Applicable.

X. RELATED PROCEEDINGS APPENDIX

Not Applicable.